

Rethinking the Expert-Non-Expert
Divide:
Developing Teaching Materials for
Medical English

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With surgeons, older may not be better
By Carla K. Johnson, Associated Press
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CHICAGO -- A new study raises questions about when older surgeons should quit the operating room, finding that for three complicated surgeries, including heart bypass, doctors older than 60 had higher patient death rates, especially if they didn't do very many of the surgeries.

The percentage of working doctors older than 65 is climbing, and some reduce their caseloads as they age, but the study suggests that's not a good idea.

Practice keeps skills high, said the study's co-author, Dr. John Birkmeyer of the University of Michigan. "Those who continue to practice in high-risk areas should maintain their caseloads, but it may be a good idea when surgeons get into the preretirement mode that they give up the most complicated and high-risk surgeries altogether," said Birkmeyer, who is 43.

Patients should ask how many procedures a surgeon does a year rather than focus on the doctor's gray hair, Birkmeyer said.

Previous studies found that older doctors are less likely to know about new treatments and medications than younger doctors, and they tend to perform worse on recertification exams.

Sometimes an aging surgeon is the last to recognize -- or admit -- it's time to quit. That's when hospital administrators should step in, said Dr. Andrew Warshaw, 67, chief of surgery at Massachusetts General Hospital.

The best hospitals monitor surgeons' rates of complications, infections, readmissions to the hospital, and deaths and use those statistics to confront doctors about a pattern of problems. Hospitals also rely on surgeons passing recertification exams every 10 years, but those tests gauge knowledge, not physical skills or technical mastery.

The study was published in the *Annals of Surgery* this month.

Surgeon Age and Operative Mortality in the United States

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Abstract

Objectives: Although recent studies suggest that physician age is inversely related to clinical performance in primary care, relationships between surgeon age and patient outcomes have not been examined systematically.

Methods: Using national Medicare files, we examined operative mortality in approximately 461,000 patients undergoing 1 of 8 procedures between 1998 and 1999. We used multiple logistic regression to assess relationships between surgeon age (≤ 40 years, 41-50 years, 51-60 years, and > 60 years) and operative mortality (in-hospital or within 30 days), adjusting for patient characteristics, surgeon procedure volume, and hospital attributes.

Results: Although older surgeons had slightly lower procedure volumes than younger surgeons for some procedures, there were few clinically important differences in patient characteristics by surgeon age. Compared with surgeons aged 41 to 50 years, surgeons over 60 years had higher mortality rates with pancreatectomy (adjusted odds ratio [OR], 1.67; 95% confidence interval [CI], 1.12-2.49), coronary artery bypass grafting (OR, 1.17; 95% CI, 1.05-1.29), and carotid endarterectomy (OR, 1.21; 95% CI, 1.04-1.40). The effect of surgeon age was largely restricted to those surgeons with low procedure volumes and was unrelated to mortality for esophagectomy, cystectomy, lung resection, aortic valve replacement, or aortic aneurysm repair. Less experienced surgeons (≤ 40 years of age) had comparable mortality rates to surgeons aged 41 to 50 years for all procedures.

Conclusions: For some complex procedures, surgeons older than 60 years, particularly those with low procedure volumes, have higher operative mortality rates than their younger counterparts. For most procedures, however, surgeon age is not an important predictor of operative risk.

Recent studies focusing on primary care have suggested an inverse relationship between surgeon age and clinical performance.¹ Older physicians are less likely to incorporate new treatment strategies into their practice and less likely to prescribe appropriate medications.^{2,3} Relative to their younger counterparts, older physicians have poorer performance on recertification examinations and are less likely to have a current knowledge base.^{4,5} Such data have prompted calls for professional organizations to initiate more rigorous processes for performance assessment and credentialing throughout a physician's career.⁶

Whether physician age is related to clinical performance in surgery is not well established. Compared with primary care, the practice of surgery may present different challenges for the older physician. Complex procedures are long and require considerable physical and mental stamina. Previous research demonstrates that manual dexterity, strength, and visuospatial ability decrease with age, along with cognitive skills and abilities to sustain attention.⁷⁻¹¹ Nonetheless, it has not been established whether such factors imply worse outcomes for patients. Two studies have suggested increased mortality rates for older surgeons with coronary artery bypass grafting and carotid endarterectomy, while others have pointed to surgeon youth and inexperience as more important risk factors.¹²⁻¹⁴

To examine the potential impact of surgeon age on patient outcomes more systematically, we performed a national study of Medicare patients undergoing a wide range of complex cardiovascular and cancer procedures. We hypothesized higher mortality rates at the extremes of surgeon age, as a result of either inexperience (for younger surgeons) or diminished physical and mental skills (for older surgeons). In examining relationships between surgeon age and mortality, we adjusted for potentially confounding variables, including patient characteristics, surgeon procedure volumes, and the attributes of hospitals in which surgeons work.

Abstracts

What do we know?

Purpose

According to Huckin (2001), journal article abstracts have at least four distinguishable functions:

1. They function as stand-alone *mini-texts*, giving readers a short summary of a study's topic, methodology and main findings.
2. They function as *screening devices*, helping readers decide whether they wish to read the whole article or not.
3. They function as *previews* for readers intending to read the whole article, giving them a road-map for their reading.
4. They provide *indexing help* for professional abstract writers and editors.
5. There are suggestions, at least in the medical literature, (Bordage & McGaghie (2001) that the goal of an abstract is provide *reviewers with an immediate oversight* of the paper they have been asked to review.

Kinds

Unstructured

Much recent work in discourse analysis has investigated the number of “rhetorical moves” (or communicative stages) in abstracts in various fields—and in various languages. Most researchers identify a potential total of five moves.

Move #	Typical labels	Implied questions
Move 1	Background/introduction/situation	what do we know about the topic?
Move 2	Present research/purpose	what is this study about?
Move 3	Methods/materials/subjects/procedures	how was it done?
Move 4	Results/findings	what was discovered?
Move 5	Discussion/conclusion/significance	what do the findings mean?

Structured

Structured abstracts were first adopted around 1987 in medicine and have since spread across several other fields, particularly in biological sciences and in some areas of psychology. A key researcher in this area is James Hartley, a British professor of psychology. In 2004, he published a review entitled “Current findings from research on structured abstracts”. Here is his own structured abstract:

Background: Structured abstracts were introduced into medical research journals in the mid 1980s. Since then they have been widely used in this and other contexts.

Aim: The aim of this paper is to summarize the main findings from research on structured abstracts and to discuss the limitations of some aspects of this research.

Method: A narrative literature review of all the relevant papers known to the author was conducted.

Results: Structured abstracts are typically longer than traditional ones, but they are also judged to be more informative and accessible. Authors and readers also judge them to be more useful than traditional abstracts. However, not all studies use “real-life” published examples from different authors in their work, and more work needs to be done in some cases.

Conclusions: The findings generally support the notion that structured abstracts can be profitably introduced into research journals. Some arguments for this, however, have more support than others.

Some Typical Features

- 100-200 words
- *That*-clauses may be important (Hyland and Tse 2005)
- I/we may be used
- Passive voice often features prominently in Methods
- Few logical connectors
- Purpose and objective statements are often fragments in PMRD/OMRD
- Certain tenses are associated with certain moves/sections

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Improving operating room efficiency through process redesign

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Background: Operating rooms (ORs) are important resources for patient care and revenue, yet a significant portion of OR time is taken up by nonoperative activities. We hypothesized that redesigning the process that occurs between operations would lead to a decrease in nonoperative time (NOT = room turnover time plus anesthesia induction and emergence time).

Methods: Following a 3-month multidisciplinary planning process, a prospective study to reduce NOT was initiated in 2 of 17 ORs at a tertiary care academic medical center. Unlike previous reports, which have limited the number of participants, we constructed a process that was restricted only by case duration. The plan focused on minimizing nonoperative tasks in the OR, effecting parallel performance of activities, and reducing nonclinical disruptions. Eligible cases were those with an estimated operative time of 2 hours or less. A target NOT of 35 minutes was established. Cases of similar duration in the remaining ORs served as a concurrent control group.

Results: Twenty-three surgeons, 13 anesthesiologists, and 11 nurses worked in the project ORs over a 3-month period. Residents participated in all cases. There was a significant reduction in NOT (42.2 ± 12.9 vs 65 ± 21.7 minutes), turnover time (26.4 ± 11.2 vs 42.8 ± 21.7 minutes), and anesthesia-related time (16.9 vs 21.9 minutes, all $P < .001$) in the project rooms compared with cases of similar duration in control ORs. Process-related delays were identified in 70% of cases when NOT exceeded the 35-minute target.

Conclusions: *These results demonstrate that* a coordinated multidisciplinary process redesign can significantly reduce NOT. This process is applicable to most ORs and has optimal benefit for cases of 2 hours or less in duration. *The high percentage of residual process-related delays suggests that* further improvements can be anticipated.

Task One

Convert five of these noun phrases into appropriate *that* clauses. Here is an example:

The results offer clear evidence of the need to monitor patients for antibodies.

The results offer clear evidence *that* patients should be monitored for antibodies.

1. Our results are consistent with those of other studies reporting the need for resection in one third of the patients due to complications of surgical treatment.
2. The findings suggest a connection between depression and complications resulting from CABG.
3. The data support the use of a nonsynthetic, biodegradable soft tissue patch for reconstructing the thoracic cage in growing children.
4. Results confirm the influence of low procedure volumes on operative mortality.
5. Our study has shown a 23% graft rejection rate after 10 years among 3,287 recipients of HLA identical sibling donors in the UNOS Registry.

Since many abstracts in medical journal contain no *that* clauses, it might be useful to do an activity that removes the *that* clause.

1. These results indicate that 68% of the total failures of living donor grafts are attributable to non-HLA factors and 32% to HLA mismatch.
2. The findings would seem to indicate that isolated nerve repairs do not require complete immobilization of the hand post-surgery.
3. These findings suggest that preoperative vocal cord paralysis is the most reliable clinical marker of invasive thyroid malignancy.
4. Based on the limited evidence from our observational studies it appears that non-technical skills constitute a critical component of surgical competence.

What are some strategies for concluding?

Should authors

- evaluate?
- boost or promote the significance of the work?
- make a recommendation?

The fact that abstracts are freestanding should be considered.

Task Two

Here are some conclusions for abstracts of surgery RAs. Decide whether in your opinion they are (positively) evaluative (E), offer implications (I), Recommend a course of action (R), or seem to objectively summarize (S). Discuss in pairs if possible.

- _____ 1. Compared with synthetic soft tissue patch material, the nonsynthetic, biodegradable soft tissue patch (SIS) has proven to be a superior alternative, thus far, to others for use in our population of patients for reconstruction of the thoracic cage in the growing child.
- _____ 2. These results demonstrate that a coordinated multidisciplinary process redesign can significantly reduce NOT (non-operative time). This process is applicable to most ORs and has optimal benefit for cases of 2 hours or less in duration. The high percentage of residual process-related delays suggests that further improvements can be anticipated.
- _____ 3. Preoperative depression is an independent risk factor for mortality following cardiac valve surgery. Depression screening should be incorporated into preoperative risk stratification, and future studies are warranted to determine if preoperative or postoperative interventions to treat depression can improve outcomes.
- _____ 4. Sleep deprivation does not affect operative morbidity or mortality in cardiac surgical operations. These data do not support a need for work hour restrictions on surgeons.
- _____ 5. Increasing the number of rib fractures correlated directly with increasing pulmonary morbidity and mortality. Patients sustaining fractures of 6 or more ribs are at significant risk for death from causes unrelated to the rib fractures. Epidural analgesia was associated with a reduction in mortality for all patients sustaining rib fractures, particularly those with more than 4 fractures, but this modality of treatment appears to be underused.

Extensions

- Strength of claim
- That-clauses
- Making recommendations and suggestions
- Modals
- Language of association or comparison
- Metasdiscourse

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